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EXAMINER

SRIVASTAVA, KAILASH C

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/617,177	Applicant(s) POLSENSKI ET AL.	
	Examiner Dr. Kailash C. Srivastava	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 26-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>30/10/03&28/6/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' response filed 06 January 2005 to Office Action mailed 16 December 2004 is acknowledged and entered.

CLAIMS STATUS

2. Claims 1-30 are pending.

Restriction/Election

3. Applicants' response and election with traverse of Group I, Claims 1-25 for prosecution filed 06 January 2005 to election requirement in Office Action mailed 16 December 2004 is acknowledged and entered. Applicants' traversal is on the grounds that the inventions grouped as I and II are interrelated as product and process. According to the applicants, the two inventions can be searched without any hardship to the Examiner because the "two groups of claims overlap". Citing MPEP §803, applicants argue that for restriction requirements within two Groups of claims, reasons for restriction, such as undue burden must be shown.

Applicants' arguments are fully and carefully considered but are not found persuasive because of the reasons of record on pages 2-3 in Office Action cited *supra*. In addition, the search for each of the distinct inventions of Groups I-II is not co-extensive particularly with regard to the literature search. Further, a reference that would anticipate the invention of one group would not necessarily anticipate or even make obvious another group. Finally, the condition for patentability is different in each case.

As to rejoining claims in Groups I and II, if the claims in Group I are found allowable, Examiner has already cited *In re Ochiai* and provisions under MPEP §821.004 regarding rejoinder in the Office Action mailed 16 December 2004 informing the applicants to that effect. Therefore, the restriction requirement is still deemed proper and is made FINAL.

Accordingly, Claims 26-30 are withdrawn from further consideration as being directed to a non-elected invention. See 37 CFR §1.142(b) and MPEP §821.03. Examiner suggests that to expedite prosecution, the non-elected claims cited *supra* be canceled in response to this Office action.

4. Claims 1-25 are examined on merits

Information Disclosure Statement

5. Applicants' Information Disclosures (i.e., IDS) filed 30 October 2003 and on 28 June 2004 have been made of record and considered.

Priority

6. Applicants' claim for domestic priority under 35 U.S.C. § 119(e) is acknowledged.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Long*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 9, 12-13 and 22-28 of U.S. Patent 5,919,689 A to Sellvig et al. Although, the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter (i.e., an article coated with a composition comprising: an acrylic polymer, amylolytic and proteolytic enzymes secreting microorganism, an inorganic salt and surfactant) in instant application is claimed in the compositions of cited U.S. Patent cited *supra*. Thus, it would be obvious to one of ordinary skill to substantiate said composition with a nutrient medium to support microbial growth for sustained production of enzymes and to successfully employ said composition to coat an article with said composition.

9. Claims 1-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 and 10-15 of U.S. Patent 6,342,386 B1 to Powers et al. Although, the conflicting claims are not identical, they are not patentably distinct from each other because the composition applicable in the method claims 1-5 and 10-15 of the U.S. Patent cited *supra* is comprised of the same ingredients (i.e., an acrylic polymer, amylolytic and proteolytic enzymes secreting

microorganism, additional amylolytic and proteolytic enzymes, an inorganic salt and surfactant) as in Claims 1-25 of instant application.

Claim Rejections - 35 U.S.C. § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. 1-25 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims are directed to an article that is coated with a composition with or without a binder, wherein said composition is comprised of an amylolytic and a proteolytic enzyme producing microorganism, a surfactant, an inorganic salt, nutrient for said microorganism and amylolytic and proteolytic enzymes. Furthermore, in said composition, said microorganism and said enzymes are absorbed to calcium carbonate, talc, clay or aluminum stearate.

From the record of the presently filed written disclosure, the specification only demonstrates with working examples a composition that comprises amylolytic enzyme and a microorganism that is art known to principally produce protease. In addition, the examples demonstrate that only the microorganism is absorbed and that too only to calcium carbonate. There are no working examples of a composition comprising both; a proteolytic enzyme and an amylolytic enzyme producing microorganism and additionally supplementing proteolytic or amylolytic enzyme have not been shown absorbed to talc or aluminum stearate or clay. Therefore, the specification as presented (see for e.g., Examples 1-12) does not reasonably provide any working examples with proteolytic enzyme component of the claimed composition or an amylolytic enzyme producing microorganism or amylolytic or proteolytic enzyme absorbed to calcium carbonate, clay, talc or aluminum stearate. Thus, the claimed invention is not considered enabled.

A person of skill would not be able to practice the invention because undue experimentation will be required to obtain claimed invention. The person of skill will not be able to practice the claimed invention due to the quantity of experimentation necessary; limited amount of guidance and limited number of working examples in the specification; nature of the invention; state of the prior art; relative skill level of those in the art; predictability or unpredictability in the art; and breadth of the claims. *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). Undue experimentation will be necessary because there

is no recited guidance, i.e., employing a calcium carbonate absorbed proteolytic or amyolytic enzyme in the context of claimed composition as recited in the claimed invention.

12. Claims 1-25 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with those claims. Claims are directed to an article that is coated with a composition with or without a binder, wherein said composition is comprised of an amyolytic and a proteolytic enzyme producing microorganism, a surfactant, an inorganic salt, nutrient for said microorganism and amyolytic and proteolytic enzymes. Furthermore, in said composition, said microorganism and said enzymes are absorbed to calcium carbonate, talc, clay or aluminum stearate.

From the record of the presently filed written disclosure, the specification only demonstrates with working examples a composition that comprises amyolytic enzyme and a microorganism that is art known to principally produce protease. In addition, the examples demonstrate that only the microorganism is absorbed and that too only to calcium carbonate. There are no working examples of a composition comprising both, a proteolytic enzyme and an amyolytic enzyme-producing microorganism and additionally, supplementing proteolytic or amyolytic enzyme have not been shown absorbed to talc or aluminum stearate or clay. Therefore, the specification as presented (see for e.g., Examples 1-12), does not reasonably provide any working examples with proteolytic enzyme component of the claimed composition or an amyolytic enzyme producing microorganism or amyolytic or proteolytic enzyme absorbed to calcium carbonate, clay, talc or aluminum stearate. Since microorganism that produces each one of proteolytic and amyolytic enzyme as well as supplementing proteolytic and amyolytic enzyme not produced by said microorganism, and said supplementing proteolytic and amyolytic enzyme absorbed to at least one support material among aluminum stearate, calcium carbonate, clay or talc is deemed essential component of the claimed invention, the claimed invention is not considered enabled commensurate in scope with the claimed subject matter.

A person of skill would not be able to practice the invention because undue experimentation will be required to obtain claimed invention. The person of skill will not be able to practice the claimed invention due to the quantity of experimentation necessary; limited amount of guidance and limited number of working examples in the specification; nature of the invention; state of the prior art; relative skill level of those in the art; predictability or unpredictability in the art; and breadth of the claims. *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). Undue experimentation will be necessary because there is no recited guidance, i.e., employing a calcium carbonate absorbed proteolytic or amyolytic enzyme in the context of claimed composition as recited in the claimed invention.

13. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

14. Claims 6-8, 13-15, 17-19 and 22-23 are rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicants regard as the invention.

- In Claim 6 is cited the limitation, "include a binder". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 5 from which Claim 6 depends, or in Claim 1 from which Claim 5 depends, the limitation "include a binder" is not recited.
- The recitation, "include" in Claims 6 and 13-15 renders those claims unclear, vague and indefinite. The recitation is indefinite because it is not clear whether said term is open, like the conventional term "comprising" or whether the term excludes other ingredients, like the term "consisting of". Examiner suggests that the applicants use the transitional phrase -"comprises".
- Claim 8 as currently recited seems to be incomplete because it does not elaborate on the terms, "unwanted growth" or "surface". Is this unwanted growth related to the growth of an organism already present on a surface, or growth of a material/organism/ chemical that is foreign to the surface and if it is a surface, what is that the surface is related or belongs to? If unwanted growth is occurring on surface, what are the metes and bounds for said surface? Appropriate correction. Clarification/ elaboration required.
- In Claim 8 is recited the limitation, "unwanted growth". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 6 from which Claim 8 depends, the limitation "unwanted growth" is not recited.
- The recitation, "unwanted growth" in Claim 8 renders that claim unclear, vague and indefinite. The recitation, "unwanted" is similar to the word "preferably" and is indefinite because it is not clear how one can determine with clarity and accuracy when and by whom the "want" is to be exercised. The metes and bounds for the term "wanted" aren't defined. Appropriation definition is required.

- In Claim 13 is recited the limitation, "inorganic salt". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 1 from which Claim 13 depends, the limitation, "inorganic salt" is not recited.
- In Claim 14 is recited the limitation, "surfactant". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 1 from which Claim 14 depends, the limitation, "surfactant" is not recited.
- In Claim 15 is recited the limitation, "acrylic binder". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 1 from which Claim 15 depends, the limitation, "acrylic binder" is not recited.
- Recitation, "binder" in Claims 15 and 22-23 renders Claims 15 and 23 unclear. Applicants do not define the meaning for the term "binder". Does it mean a chemical, a notebook, an article wherein loose pages are kept securely, some material that sticks or glues to another material or helps in sticking two objects together, or helps form a chemical bond between two atoms? Or what? The metes and bounds for the term "binder" are not defined. Appropriate clarification/ definition required.
- The recitation, "marine surface" in Claim 16 renders Claim 16 unclear, confusing and indefinite. What is a marine surface, the surface or bottom of an ocean/sea? A seashore, or an object in sea or ocean, whether said object is submerged, floating or ashore? Metes and bounds for the phrase, "marine surface" should be defined.
- In Claim 17 is recited the limitation, "vegetative cells absorbed to calcium carbonate, clay, talc or aluminum stearate". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 1 from which Claim 17 depends, the limitation, "cells absorbed to calcium carbonate, clay, talc or aluminum stearate" is not recited, nor is there a reference made to a material "absorbed to calcium carbonate, clay, talc or aluminum stearate". Appropriate correction is required.
- In Claim 18 is recited the limitation, "enzymes absorbed to calcium carbonate, clay, talc or aluminum stearate". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 1 from which Claim 17 depends, the limitation, "enzymes absorbed to calcium carbonate, clay, talc or aluminum stearate" is not recited, nor is there a reference made to a material "absorbed to calcium carbonate, clay, talc or aluminum stearate". Appropriate correction is required.

- The recitation, "marine environment" in Claim 19 renders Claim 19 unclear, confusing and indefinite. What is a marine environment, the area around the beach of an ocean/sea? A seashore, or an object in sea or ocean, whether said object is submerged, floating or ashore? Or sea/ocean water? Or all of above? Metes and bounds for the phrase, "marine environment" should be defined.
- In Claim 22 is recited the limitation, "binder". There is insufficient antecedent basis for this limitation in the cited claim, because in Claim 20 from which Claim 22 depends, the limitation, "binder" is not recited.

All other claims depend directly from the rejected claims (e.g., Claim 4) and are, therefore, also rejected under 35 U.S.C. §112, second paragraph for the reasons set forth above.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-5, 7-16 and 19-25 are rejected under 35 U.S.C. § 102(b) as anticipated by Selvig et al. (U.S. Patent 5,919,689).

Claims recite an article coated in layers with a composition comprising a microorganism that produces amylolytic or proteolytic enzyme, additional amylolytic or proteolytic enzyme not produced by the microorganism, wherein said composition further comprises an inorganic salt, an acrylic binder a surfactant and nutrients for the microorganism. The enzyme in said composition inhibits growth presumably of marine microorganisms.

Selvig et al. teach a marine surface coated with marine antifouling coating composition. Said composition comprises an amylolytic and a proteolytic enzyme producing microorganism, a surfactant, an acrylic base material, an inorganic salt and additionally amylolytic and proteolytic enzymes (Column 17, Lines 40-52; Column 18, Lines 8-9 and 38-52; Column 19, Lines 13-25; Column 20, Lines 1-25). The microorganism in said composition produces surfactant (Column 19, Lines 25-27). Said composition when coated to marine surface produces a film on said marine surface (Column 18, Lines 3-4). Furthermore, said marine antifouling composition retards/reduces fouling the marine surface (Column 17, Lines 54-55).

Note that surfactant comprising microorganism is comprised in the composition. Therefore, the composition inherently comprises surfactant. Selvig et al. expressly teach coating the marine surface with their composition as film. Said marine surface therefore, inherently will have multiple layers and by the same token the second layer will be between the surface and the first layer, first layer being the layer most distal from the marine surface. Also since the composition is comprised of enzymes (i.e., proteins), and an inorganic salt, the composition is inherently comprised of nutrients for the microorganism and when said composition is coated on the marine surface, inherently the coating is such that the second layer, that may be closer to the marine surface may not comprise the microorganism to provide further antifouling of the surface. Note that the composition disclosed in prior art teaching is the same as instantly claimed. Therefore, the prior art composition inherently must function and provide the same effect as instantly claimed (See e.g., *In re Best*, 195 USPQ 430, 433-CCPA 1977).

Therefore, the reference is deemed to anticipate the cited claims.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention of

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR §1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

19. Claims 1-5, 7-16 and 19-25 are rejected under 35 U.S.C. § 103 (a) as obvious over Selvig et al. (U.S. Patent 5,919,689) in view of Powers et al (U.S. Patent 6,342, 386).

Claims recite an article coated in layers with a composition comprising a microorganism that produces amylolytic or proteolytic enzyme, additional amylolytic or proteolytic enzyme not produced by the microorganism, wherein said composition further comprises an inorganic salt, an acrylic binder a surfactant and nutrients for the microorganism. The enzyme in said composition inhibits growth presumably of marine microorganisms.

Selvig et al's teachings have been discussed *supra*. Selvig et al, do not expressly teach that their composition retards "undesired growth" from marine surface in a marine environment. Powers et al. teach removing undesired growth (Column 17, Line 32), wherein the composition is comprised of same ingredients (Column 17, Lines 27-32, 36, 37-39, 40-43 for e.g.) as Selvig et al's composition.

One having ordinary skill in the art at the time of the claimed invention would have been motivated to modify/combine the teachings from Selvig et al. according to teachings from Powers et al. to obtain an article coated in layers with a composition comprising an amylolytic or proteolytic enzyme producing microorganism, an acrylic binder, a surfactant, an inorganic salt and additional amylolytic or proteolytic enzyme and nutrients for said microorganism in another layer, wherein said coating inhibits "undesired growth" on said article (i.e., marine surface), because both Selvig et al. and Powers et al. teach an article coated with composition described *supra* and Powers et al. additionally teach inhibiting "undesired growth" with said composition. Thus, Powers et al. remedy the deficiency in Selvig et al's teachings of retarding "undesired growth".

Thus, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify Selvig et al's teachings with those from Powers et al's so as to obtain the claimed coated article with the claimed composition. The prior art references do not teach the same exact chronology or layering as instantly recited. However, the adjustment of particular conventional working conditions is deemed merely a matter of judicious selection and routine optimization of a result-effective parameter, which is well within the purview of the skilled artisan.

From the teachings of the references cited *supra*, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

20. Claims 6, 17-18 are rejected under 35 U.S.C. § 103 (a) as obvious over Selvig et al. (U.S. Patent 5,919,689) in view of Powers et al (U.S. Patent 6,342, 386) and further in view of Errede et al. (U.S. Patent 5, 354, 603) with evidence provided by Scott et al. (U.S. Patent 3,095,307) and Carney (U.S. Patent 3,115,404)

Claims 6 and 17-18 require that the composition with which the claimed article is coated not contain acrylic binder and that the microbial cells and the enzymes are absorbed to calcium carbonate, clay, talc or aluminum stearate.

Selvig et al's and Powers et al's teachings are discussed above.

Errede et al. teach a an antifouling multilayered coating comprised of particulate composition, wherein particulate composition does not comprise a binder, but comprises inorganic salts (e.g., zinc oxide) proteolytic and amyolytic enzyme producing microorganisms (e.g., *Aspergillus niger* and *Bacillus subtilis*) additional enzymes, surfactants that are present in the web encapsulating the particulate material. The encapsulating web is non-woven and is selected among, polyamide or polyurethane and other materials (Column 9, Lines 46 to Column 10, Line 4; Column 11, Lines 14-16; Column 15, Line 11 to Column 16, Line 26). It is well known in art to apply any of the materials among clays, calcium carbonate or polyurethane for absorption of microorganisms and or enzymes (See Carney, U.S. Patent 3,115,404, Column 5, Lines 35-70 and Scott et al., U.S. Patent 3,095,307, Column3, Lines 25-55; Column 4, Line 70 to Column 5, Line 8). Thus, Errede et al. teach a marine non-fouling composition coated as layers on a marine surface, wherein the composition does not contain any binders and the amyolytic and proteolytic enzyme producing microorganisms or said enzymes are absorbed in a web matrix as particulates.

One having ordinary skill in the art at the time of the claimed invention would have been motivated to modify/combine the teachings from Selvig et al. and Powers et al. according to teachings from Errede et al. because Errede et al teach a composition comprising amyolytic and proteolytic enzyme producing bacteria, surfactant, inorganic salts as well as the proteolytic and amyolytic enzyme as a layered coating for the marine surface and further teach that said microorganisms and said enzyme comprising composition is encapsulated as particles and the particles are entrapped in a web.

Thus, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify teachings from Selvig et al. according to those from Errede et al., because Errede et al., remedy the deficiency in Selvig et al's teachings of a composition without the binder, wherein the microorganisms and the enzymes are absorbed in calcium carbonate or talc. The prior art references do not teach the same exact variety of components, or concentrations of each one of components as instantly recited. However, the adjustment of particular conventional working conditions is deemed merely a matter of judicious selection and routine optimization of a result-effective parameter, which is well within the purview of the skilled artisan. This rejection is based on the well established proposition of patent law that no invention resides in combining old ingredients of known properties where the results obtained thereby are no more than the additive effect of the ingredients, *In re Sussman*, 1943 C.D. 518. Applicants' invention is predicated on an unexpected result, which typically involves synergism, an unpredictable phenomenon, highly dependent upon specific proportions and/or

amounts of particular ingredients. Any mixture of the components embraced by the claims which does not exhibit an unexpected result (e.g., synergism) is therefore *ipso facto* unpatentable.

Accordingly, the instant claims, in the range of proportions where no unexpected results are observed, would have been obvious to one of ordinary skill having the above-cited references before him.

From the teachings of the references cited *supra*, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

In this rejection under 35 U.S.C. §103 (a), Scott et al. (U.S. Patent 3,095,307) and Carney (U.S. Patent 3,115,404) are cited to merely support the fact that absorption of microorganisms and enzymes to a variety of supports, both organic and inorganic is well known in art and that either clay or polyurethane is applicable for said purpose.

Conclusion


21. For reasons aforementioned, no Claims are allowed.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kailash C. Srivastava whose telephone number is (571) 272-0923. The examiner can normally be reached on Monday to Thursday from 7:30 A.M. to 6:00 P.M. (Eastern Standard or Daylight Savings Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (571)-272-0926 Monday through Thursday. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding may be obtained from the Patent Application Information Retrieval (i.e., PAIR) system. Status information for the published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (i.e., EBC) at: (866)-217-9197 (toll-free). Alternatively, status inquiries should be directed to the receptionist whose telephone number is (703) 308-0196.

Kailash C. Srivastava, Ph.D.
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RALPH GITOMER
PRIMARY EXAMINER
GROUP 1200

March 20, 2005